

1973 REGISTRATION

1972

1973

1974

1975

1976

Pilot Registration — Montana Aeronautics Commission

Box 1690

Helena, Montana 59601

Phone 449-2506

Name

(Please Print)

Last

Initial

First

No.

(Leave Blank)

Mailing Address

Phone Bus.

Phone Res.

City

Count

State

ZIP

FAA

To 1 hour

Est. Hrs.

Certificate No.

Last 12 Mo.

LICENSE RATING & ACTIVITY

(Check)

(Check)

Student

Private

Commercial

Airline Transport

Instrument

Flight Instructor

Active Flight Instructor

Private Business and Pleasure

Employed Commercial Aviation

By

Name of Company

Registration Fee \$1.00 per year.

OVER I affirm on oath that the foregoing is

REGISTRATION IS MANDATORY
Commission Regulation, March 16, 1954, Reference
Codes of Montana, 1967, Title 1, Chapter 2, Section

April 1, 1973, is the deadline for 1973 registration. The Division of Aeronautics would like to urge all Montana Pilots and Aircraft Owners to please hurry and register before this date.

Volume 24 — NO. 1

January, 1973



MISSOULA MECHANIC RECEIVES FAA AWARD

William R. Scott was presented a Certificate of Appreciation by the Rocky Mountain Region Federal Aviation Administration, Denver, Colorado, at Missoula, Montana, on December 14, 1972. The award was made by Lester Severance, Chief of RM-GADO-5, Helena.

Scott's colorful career as an aviation mechanic began in California in Johnson Flying Service, Missoula, where he remained until his retirement in July 1972.

Probably the most noteworthy talent of "Scotty" has been his ability to maintain and supervise the maintenance of a long and varied list of aircraft over the years including Curtiss Travel-Aires, Ford Tri-Motors, Douglas DC-2, DC-3, Curtiss C46,

Gruman TBM, North American B-25, Douglas B-26, Douglas F7F and a host of general aviation aircraft now in use by Johnson Flying Service.

Scott has long been recognized in the northwest area of the US as an expert in his particular field and his advice and counsel in aircraft maintenance matters has been constantly sought by general aviation individuals, fixed base operators, supplemental air carriers and, at times, the airlines serving this area.

In 1968 Scott was also honored as the Aviation Mechanic of the Year in Montana.

ATTENTION ALL MONTANA AG OPERATORS

FAA Approval of Congested Area Agricultural Operators Required: Plans for each congested area agricultural operation must be submitted to your local FAA General Aviation District Office in writing, along with written approval for such operation (including material to be dispensed) from the appropriate official or governing body of the political subdivision.

The plan required by FAR 137.51 (b)(2) must include the following:

1. Plan for public notification of the intended operation 48 hours prior to starting the dispensing



DIVISION

OF

AERONAUTICS

operation by newspaper, radio, television, door-to-door notice, etc.

2. An aerial photograph, a large scale map, or diagram of the area to be worked appropriately marked to show all obstructions which could normally be expected to present a hazard during the operation, and the areas which could be used for an emergency landing and dumping of agricultural materials. Operators of single-engine aircraft should consider arrangements with appropriate officials for taking such measures as blocking off streets and other areas to insure that the aircraft can land in an emergency without endangering persons or property on the surface. (FAR 137.51 (b)(4)(iii)).

3. The altitude(s) and airspeed(s) to be maintained during the operation.

4. The approximate chemical dispensing rate per acre, and the name and type (solid, liquid) of material to be dispensed, including type of carrier.

5. Date(s) and hours of the day that dispensing operations will be conducted.

6. Coordination with air traffic control.

7. Other safety or operating con-

(Continued on Page 6)

**DEPARTMENT OF
INTERGOVERNMENTAL
RELATIONS**
Thomas L. Judge, Governor
Martin T. Mangan, Act. Director
Official Monthly Publication
City/County Airport
of the
DIVISION OF AERONAUTICS
Phone 449-2506
Box 1698
Helena, Montana 59601

William E. Hunt, Administrator
Worthie M. Rauscher,
Deputy Administrator

Board of Aeronautics

Richard O'Brien, Chairman
 Tom Burris, Vice-Chairman
 Robert G. Bricker, Member
 John Hebbelman, Jr., Member
 David L. Matovich, Member
 Thomas F. Kieley, Member



MONTANA AND THE SKY is published monthly in the interest of aviation in the State of Montana.

Second-Class postage paid at Helena, Montana 59601
 Subscription \$.50 per year.
 Edited by: R. Bowsher

3

**FEDERAL AVIATION
ADMINISTRATION
ITINERARY LISTINGS**

Airport	Feb.
Bozeman	21
Butte	7
Culbertson	7
Glasgow	7
Glendive	7
Great Falls	7
Havre	7
Kalispell	21
Lewistown	7
Miles City	14
Missoula	8
Sidney	8

NOTE: Provisions have been made to give private, commercial and flight examinations **ON AN APPOINTMENT BASIS ONLY** at the following FAA Flight Service Stations.

Bozeman	Livingston
Butte	Lewistown
Cut Bank	Miles City
Dillon	Missoula

Great Falls

NOTE: GADO #1 in Billings will no longer be open on Saturdays. The Billings GADO telephone number is 406-245-6179.

***Administrator's
Column***



Airport and airways development for the year 1973 does not look too promising. As of the date of this newsletter there has been no change in the ratio of local funds to federal funds as we had hoped there might be. The local sponsor still must put up 47% of any funds for airport or airways construction that will be matched by 53% by the federal government.

For various reasons the State of Montana, through the Aeronautics Division, is unable to assist local communities at this time because of lack of funds. We had hoped to interest the Legislature in the difficulties now experienced by the airports but the many other problems of the state took most of their attention.

House Bill 462 which was introduced by Wallace Edland of Scobey and Harrison Fagg of Billings was a bill that attempted to raise money for the local sponsor by using the Arizona plan of applying the property tax on airplanes for exclusive use of airports. While this was something of a new wrinkle for the state, it did have many advantages such as establishing a fund that airport boards and fixed base operators could count upon for help for their airports and hopefully eliminate the long delay between identifying a need for an airport and explaining it to the public so that they would agree to general obligation bonds in most cases, and revenue bonds in a few cases, to help support the need.

A head tax bill was passed by the legislature and unless prohibited by Congress, will do something for those

airports with significant air carrier traffic. Smaller airports of course receive no benefit from the head tax and will have to rely on local funding. If the commissioners are not presently levying a two mill tax for the airport, airport boards may want to discuss this possibility with them with an idea of accumulating enough money for repairs for existing aprons and runways as now provided by Montana law.

In addition, the commissions and boards may want to look at the possibility of becoming an airport authority as provided by the 1971 Legislature, and thereby accumulate a reserve of up to \$5,000,000 that is now forbidden to presently constituted airport boards. Presently the Aeronautics Division is involved in litigation that is now before the Montana Supreme Court growing out of loans made to Sidney and Richland County and our loan program will await the outcome of that decision.

The defeat of Edland's bill to transfer airplane tax to airports, was disappointing and does require additional effort on the part of all of us to make sure that the funding is done through acceptable channels at the earliest possible moment. The Aeronautics Division is working hard and supporting the effort to change the matching fund ratio from its present figure to 25% by the local sponsor and 75% by the federal government. But even if this survives the Presidential Veto passed through Congress, there will be much work to be done on the part of local airport people to make sure that funding is adequate and sufficient for the needs of the future.

The Montana Aeronautics stands ready to assist as always, and we regret that our financial aid is not what it could be, but we will do everything else we can do.

Two harmless X-ray devices for detecting weapons and explosives in carry-on luggage have been successfully tested by the FAA at Washington, D. C.'s Dulles International Airport.

HOW A PILOT CAN GET THE MOST FROM A WEATHER BRIEFING

By JACK B. HUGHES
Quality Control Officer
Weather Service Forecast Office
Great Falls

In last month's issue, we began answering the above title. That discussion was intended to impress upon you the need to furnish complete "Background Information" about your flight problem to the Weather Briefer during your first contact. If the logic behind this has been accepted, we are ready to consider other items to look for in getting the most from your weather briefing. As listed in the previous issue, these items included: Weather Synopsis, Hazardous Weather, Current Weather, Forecast Weather, Alternate Routes, Winds Aloft and Request for Pilot Reports.

In this discussion, we will consider each item as a separate step in a briefing; however, you would not likely be aware of such step-by-step procedure in an actual briefing. The briefer is trained to band all items, forecasts, and current weather, into a logical, continuous story. The background information you provide, plus the prevailing weather, determines manner. Pilot experience, aircraft capabilities, and duration of flight are a few of the important and obvious factors that a briefer must consider. Not so obvious is how recently the pilot may have checked the weather. If it has been several days since he has been flying, he will want the full treatment, whereas, the pilot currently enroute on a cross-country trip will be interested in recent developments only. In good weather, a briefing may consist of a simple statement to this effect, along with the latest weather report at the destination, the terminal forecast at the ETA, and the winds aloft. In marginal or bad weather, all ingredients become important.

The **Weather Synopsis**, indicated by the weather map provides the basis on which to build a mental picture of the weather. This gives the location of significant fronts and pressure systems. Over the tele-

phone, the briefer will probably devote only a sentence or two to this item. During "walk-in" or "in-person" briefings, you may be shown two or three maps in sequence to help you visualize the movement of weather systems. If maps are not available, the briefer will use the "Synoptic" section of the Area Forecast (FA).

The briefer is obligated, functionally and morally, to point out areas of **hazardous** weather along the proposed route. He has probably mentioned the area or areas in his discussion of the Synoptic Weather. Thunderstorms, IFR ceilings and visibilities, moderate or severe icing or turbulence and strong and gusty surface winds are classified as weather hazards. Often, these hazards may be the deciding factor in the pilot's Go-No-Go decision.

Current Weather, or sequence reports, will be used to bring the synoptic weather picture into sharp focus. The pilot should keep in mind, the distinction between weather **reports** and weather **forecasts**. Reports describe what is happening now while forecasts represent professional advice on what is expected to happen. Decisions based on reports alone can place the pilot, who is airborne, in the position of having to make a 180 or try to sneak under the weather. The latter practice has proved dangerous enough to be labeled one of the major causes of general aviation accidents. Since sequence reports play such an important part in our aviation weather service, it is well to keep in mind some of their weaknesses. (1) Sequence reports are observations made by professionally trained people but are taken at a fixed location with the weather moving past the station at relatively slow speeds. Pilots, on the other hand, view the same conditions from a moving position and at much greater speeds. The perspective is entirely different and cannot be over-emphasized when evaluating reports on the ground or when comparing what you experience in flight with what you were told during the briefing.

(2) In a fast moving or rapidly changing situation, the value of a particular report deteriorates rapidly and the teletype circuits are usually unable to handle all special reports of the changing conditions. (3) Sequence reports sometimes fail to give an accurate indication of what is "in between" the reporting stations. In mountainous regions, the terrain further magnifies the variance in weather conditions. Pilot Reports (PIREPS) and Radar Reports (RA-REPS) are included in Current Weather and play an important role. To mention a few: They provide the briefer of weather conditions that are in the "in between" areas of reporting stations, intensity and extent of adverse weather conditions, height and thickness of cloud layers.

Forecast Weather is the expected trends or changes in the weather and are reflected in the Area forecasts (FA), Terminal forecasts (FT) and Transcribed Weather Broadcasts (TWEB). The briefer for "walk-in" briefings, will blend these forecasts with current weather to give the most accurate advice possible for your flight. He is often required to make adjustments in light of reports received after the forecasts were released. When such adjustments amount to significant trends or unexpected changes in the weather pattern development, amended terminal forecasts and in-flight advisories are issued by the forecast office.

Alternate or Escape Routes are considered when the current or forecast weather warrants. The briefer can generally recognize, in advance, the possibility of weather conditions becoming worse than the forecasts which the pilot used in planning his flight. However, the pilot is his own best judge and should request an Alternate or Escape Route if current or forecast weather conditions are near his flying capabilities.

In view of the combination of radio navigation and pilotage in use today, briefers are encouraged to give **Winds Aloft** Forecast information at flight levels. They usually are given in general terms such as,

(Continued on Page 4)

HOW A PILOT CAN GET THE MOST FROM A WEATHER BRIEFING

By JACK B. HUGHES
Quality Control Officer
Weather Service Forecast Office
Great Falls

In last month's issue, we began answering the above title. That discussion was intended to impress upon you the need to furnish complete "Background Information" about your flight problem to the Weather Briefer during your first contact. If the logic behind this has been accepted, we are ready to consider other items to look for in getting the most from your weather briefing. As listed in the previous issue, these items included: Weather Synopsis, Hazardous Weather, Current Weather, Forecast Weather, Alternate Routes, Winds Aloft and Request for Pilot Reports.

In this discussion, we will consider each item as a separate step in a briefing; however, you would not likely be aware of such step-by-step procedure in an actual briefing. The briefer is trained to band all items, forecasts, and current weather, into a logical, continuous story. The background information you provide, plus the prevailing weather, determines manner. Pilot experience, aircraft capabilities, and duration of flight are a few of the important and obvious factors that a briefer must consider. Not so obvious is how recently the pilot may have checked the weather. If it has been several days since he has been flying, he will want the full treatment, whereas, the pilot currently enroute on a cross-country trip will be interested in recent developments only. In good weather, a briefing may consist of a simple statement to this effect, along with the latest weather report at the destination, the terminal forecast at the ETA, and the winds aloft. In marginal or bad weather, all ingredients become important.

The **Weather Synopsis**, indicated by the weather map provides the basis on which to build a mental picture of the weather. This gives the location of significant fronts and pressure systems. Over the tele-

phone, the briefer will probably devote only a sentence or two to this item. During "walk-in" or "in-person" briefings, you may be shown two or three maps in sequence to help you visualize the movement of weather systems. If maps are not available, the briefer will use the "Synoptic" section of the Area Forecast (FA).

The briefer is obligated, functionally and morally, to point out areas of **hazardous** weather along the proposed route. He has probably mentioned the area or areas in his discussion of the Synoptic Weather. Thunderstorms, IFR ceilings and visibilities, moderate or severe icing or turbulence and strong and gusty surface winds are classified as weather hazards. Often, these hazards may be the deciding factor in the pilot's Go-No-Go decision.

Current Weather, or sequence reports, will be used to bring the synoptic weather picture into sharp focus. The pilot should keep in mind, the distinction between weather **reports** and weather **forecasts**. Reports describe what is happening now while forecasts represent professional advice on what is expected to happen. Decisions based on reports alone can place the pilot, who is airborne, in the position of having to make a 180 or try to sneak under the weather. The latter practice has proved dangerous enough to be labeled one of the major causes of general aviation accidents. Since sequence reports play such an important part in our aviation weather service, it is well to keep in mind some of their weaknesses. (1) Sequence reports are observations made by professionally trained people but are taken at a fixed location with the weather moving past the station at relatively slow speeds. Pilots, on the other hand, view the same conditions from a moving position and at much greater speeds. The perspective is entirely different and cannot be over-emphasized when evaluating reports on the ground or when comparing what you experience in flight with what you were told during the briefing.

(2) In a fast moving or rapidly changing situation, the value of a particular report deteriorates rapidly and the teletype circuits are usually unable to handle all special reports of the changing conditions. (3) Sequence reports sometimes fail to give an accurate indication of what is "in between" the reporting stations. In mountainous regions, the terrain further magnifies the variance in weather conditions. Pilot Reports (PIREPS) and Radar Reports (RA-REPS) are included in Current Weather and play an important role. To mention a few: They provide the briefer of weather conditions that are in the "in between" areas of reporting stations, intensity and extent of adverse weather conditions, height and thickness of cloud layers.

Forecast Weather is the expected trends or changes in the weather and are reflected in the Area forecasts (FA), Terminal forecasts (FT) and Transcribed Weather Broadcasts (TWEB). The briefer for "walk-in" briefings, will blend these forecasts with current weather to give the most accurate advice possible for your flight. He is often required to make adjustments in light of reports received after the forecasts were released. When such adjustments amount to significant trends or unexpected changes in the weather pattern development, amended terminal forecasts and in-flight advisories are issued by the forecast office.

Alternate or Escape Routes are considered when the current or forecast weather warrants. The briefer can generally recognize, in advance, the possibility of weather conditions becoming worse than the forecasts which the pilot used in planning his flight. However, the pilot is his own best judge and should request an Alternate or Escape Route if current or forecast weather conditions are near his flying capabilities.

In view of the combination of radio navigation and pilotage in use today, briefers are encouraged to give **Winds Aloft** Forecast information at flight levels. They usually are given in general terms such as,

(Continued on Page 4)

(Continued from Page 3)

Westerly-15 knots. If you desire to prepare a flight log, you may find it necessary to request winds in detail.

Request for Pilot Reports will usually be made at the end of the briefing. As previously discussed above, it is through Pilot Reports that blind areas and additional weather information is relayed and included in the briefings. Another way of looking at PIREPS, they are reports by Pilots, to other Pilots and in Pilot terminology.

To the Weather Briefer, each flight is a special problem and he can do his best briefing when adequate background information is provided. A complete pilot weather briefing can be divided into various parts for purposes of discussion but in actual practice, the efficient briefer blends all items into a concise package taking as little of your time as possible.

FAA INSPECTOR'S CORNER



By LAUREN D. BASHAM
Accident Prevention Specialist
RM-GADO-5, Helena
"Survival By Chance"

The Federal Government in its infinite wisdom has established many rules or regulations since the birth of aviation by which a pilot may reasonably be expected to fly long and safely.

A major portion of almost all aviation training programs is necessarily devoted to the understanding and application of these "rules of the air." Statistics show that in many instances, a violation of the Federal Aviation Regulations has either caused or contributed to an accident. The pilot then is ultimately responsible for the safety of his flight op-

erations. It is his prerogative to plan flight carefully and use good judgment in its execution.

It's quite safe to say that no successful business man would consider making a decision of a business nature without a careful analysis of all discernible information and facts pertinent to the situation at hand. Yet, that same business man will often make a decision concerning the use of an aircraft based more on emotion and the burning desire to arrive somewhere in time for an appointment than on information critical to his safety which is available simply for the asking or by the barest research.

Recently, a pilot from the central U.S. flew to Montana with his wife and son on board. He arrived in Glasgow, Montana, late in the afternoon and after a refueling stop, departed for Great Falls, Montana. Supposedly some time after his departure for Great Falls, his aircraft's electrical system failed. However, he was not aware of the electrical failure until approaching darkness caused him to turn on his navigation lights. He then realized that his radio had not been working properly and that he was lost. The pilot continued west and some time later observed a rotating beacon in the distance ahead. He landed and found that he was at Malmstrom Air Force Base, Montana.

Later that same night, after his electrical system was hopefully repaired by a good samaritan at the air base, he again departed for his destination further west. Some time later, he was alarmed to find that he could no longer see the ground or lights for visual reference and that the air around him was filled with heavy snow streaks.

By his own admission, he lost control of the aircraft and managed to regain control only to lose it again momentarily and "break out looking down at another rotating beacon." Again, he landed without knowing where he was and discovered that he was on the Great Falls International Airport.

Since this pilot had attracted considerable attention by this time a

number of concerned persons made it a point to have conversation with him concerning his recent flight activity.

It would be reasonably correct to say that at this point, while the pilot involved was visibly shaken, he did not grasp the significance of all that had happened or just how narrowly he and his family had escaped death.

The following day, the pilot was able to complete the flight to his destination.

A few days later, in a discussion of the above flight, the pilot stated in general context that he—thought the weather conditions were very good (scattered snow showers with some reported mountain top obscuration)—never considered stopping because of darkness or turning around and returning to his last point of departure—didn't notice any inoperative panel instruments until turning on the navigation light switch—didn't notice anything peculiar about the first airport beacon he saw (Malmstrom-split flash)—didn't know that the military bases used a split flash beacon system—was never close to any mountains (even on a direct route at 8500 feet MSL) and finally, that he flew from a small field at home and wasn't too familiar with the required use of radio at a controlled field!

In conclusion, this pilot was counseled at length by a number of people under the guidelines of the FAA Accident Prevention Program. Clearly and obviously, he had not conducted proper flight planning, he had exercised poor judgment, he had insufficient knowledge regarding the use of radio and the **Federal Aviation Regulations**. He had in fact, "planned an accident which did not happen."

Our accident statistics are full of instances in which pilots apparently made even less mistakes and perished in the process. We can only hope that this pilot profited in some way from his "experience"—it would indeed be a tragedy if he did not!

AVIATION EDUCATION HIGHLIGHTS



By MICHAEL A. SCHUKERT
Aviation and Space Education Chief

In my last article I briefly described the Delta Dart Project, an innovative model based aviation education program for elementary school youngsters. Presently there are 14 schools which are officially participating and application inquiries continue to filter in. By late spring I should be getting some feedback from the project promoter, the Blankfort Group of Los Angeles, Calif.

Aerospace studies at the elementary level is a fascinating variation of the currently popular multi-media approach to education, and the Delta Dart Project might generate increased attention by the nation's curriculum decision-makers who have a mandate to insure that education is relevant to the air and space age in which we find ourselves.

Although elementary aviation and space studies are an interesting and, in my opinion, a necessary adjunct to primary education, we must not assume that an introductory exposure to aerospace at such an early age will be sufficient to foster the degree of interest, commitment, and technical literacy necessary to assure favorable attitudes as an adult regarding aeronautical and space-related activities in local, state, national, and international communities. Elementary aerospace studies represent a logical beginning, but what is needed is an articulated program of aviation and space education at all levels including the high school, post-secondary institutions, and colleges.

Montanans are fortunate in that definite steps have been taken in response to this need and, thanks

largely to the efforts of my predecessors in the Division of Aeronautics, we have a solid foundation on which to build viable aerospace studies programs at all levels of education. To support this claim I need only to cite the following statistics: eight high school-sponsored aeronautical science courses, two vocational-technical center aviation career programs, and three colleges which host summer aerospace education workshops. Granted, we could be doing a lot more, especially at the high school level, but, considering the austere budgetary constraints plaguing educational planners these days, we are making progress.

Our accomplishments to date may not be very impressive to the casual observer or to those who are unfamiliar with the painfully slow and frustrating process of convincing school and college officials that aviation and space studies are more than a mere frill, diversion, or fun-type of activity. There are also those among us who think that Montana's wide-ranging aerospace programs are actually self-generating and self-sustaining and, on the basis of this (mistaken) assumption, maintain that the Aeronautics Division's employment of a full-time aviation and space education staff member is both uneconomical and unnecessary. In all deference to those harboring such a notion, I can only respond by posing the following five questions: (1) When did a Montana high school first offer an accredited course in aeronautics?, (2) When did a Montana college first agree to host an aviation/aerospace teacher in-service preparation program?, (3) When did one of Montana's state agencies first consent to sponsor and fund a flight training scholarship program for the state's youth?, (4) When did high school agriculture and conservation teachers first discover the possibility of using state aircraft to permit students to observe actual land use practices from the air, and, (5) When did the Office of the State Superintendent of Public Instruction first give sanction to aviation as a means

of promoting academic and vocational achievement? Those of us who have been around long enough to provide answers to the above questions could also probably tell us when the Division of Aeronautics first decided to employ a person to develop, promote, and implement sound aviation education programs in Montana. I myself, being a newcomer to the state, cannot answer the five questions, but in the course of time I will become familiar with the history of aviation and space education in Montana and, as I become enlightened, I strongly suspect that the real beginning of aerospace education progress in Montana will coincide with the date when the Aeronautics Division first decided to employ the services of an aviation-oriented educator.

You can be proud of the fact that Montana has set a precedent for state aeronautical agency support of aerospace education, that our aviation science programs have opened the doors to academic and career success for so many of our aviation-inspired youth, and that your Division of Aeronautics sustains its commitment to the state's aviation and space educational activities in spite of a barebones budget and a growing cadre of "nay-sayers" and masters of the horizontal nod.



TOWER

OPERATIONS

NOVEMBER 1972

	Total Operations	Instrument Operations
Great Falls	5,853	1,487
Missoula	6,232	610
Billings	5,186	1,970
Helena	3,251	541

DECEMBER 1972

Great Falls	3,766	1,402
Missoula	2,620	529
Billings	5,308	2,093
Helena	2,112	586

TOTAL OPERATIONS

JANUARY - DECEMBER 1972

Great Falls	72,978	13,852
Missoula	75,409	4,651
Billings	66,692	16,580
Helena	43,469	6,743

(Continued from Page 1)

siderations as may be required for the particular operation.

Operators must submit plans for congested area operations in accordance with the above sufficiently in advance so that the proposed operation may be studied, coordinated with the operator, and the operation monitored by inspector personnel. The provisions of the plan of operation will be included in the letter of approval.

HIGH SCHOOL AVIATION COURSES PLAY VITAL ROLE; STRONGER EFFORTS NEEDED BY PILOTS, FBO'S

Wichita, Kansas—Aviation education is playing an increasingly vital role in today's high school curriculum, and is exposing students to material which is personally rewarding, motivating and relevant to both society and their own futures.

These are some of the conclusions drawn from a recent survey for Cessna Aircraft Company, by Dr. Elwood Traylor, chairman of the Department of Educational Psychology, Wichita State University. The study surveyed aviation education students at 17 high school throughout the U.S.

"This information," said Cessna's Aviation Education Manager Frank Mitchell, "gives us important insights into the rapid growth of aviation education at the high school level during the past six years."

"When Cessna first established its Aviation Education Department in 1966 to help teachers develop classroom materials and curricula, we were able to identify only 66 U.S. high schools which offered aviation for credit. Today, more than 1,300 have accredited aviation education programs."

"The effect of these courses on students has been very positive."

The survey also pointed out that students consider aviation to be a "high interest" course, and one on

which they spend as much—or more—time than they do on other courses they are taking. They consider the time spent to be valuable, useful and appropriate to the today's world today and their own futures.

"Significantly," Mitchell said, "students participating in the surveys indicated more interest in aviation when they completed the course than when they started . . . even though their interest was high initially. Further, they were impressed with the types of activities and experiences in which they were involved during the course.

"Another frequent response was that the step between theory and practice in aviation is a small one, and one in which it is easy for students to relate.

"However, the survey indicated a lack of consistent and continuous stimulation on the part of the school, advisors or counselors to encourage students to participate in the program. The young people who did become involved had to seek out the course rather than having it made known to them.

"This indicates that counselors do not appear to be generally aware of the high student interest in aviation courses," Mitchell added, "or of the career dimensions they contain.

"There is need for an extensive effort on the part of everyone involved within the aviation community—pilots, airport operators and aircraft-users businesses—to provide support for instructors in aviation classes.

"Also, more detailed study is needed by the schools to determine more effective ways of acquainting the younger generation with the aerospace age and incorporating this curriculum and its motivational aspects into other general studies, such as sciences, social studies and other subject areas."

PORTABLE OXYGEN BOTTLES PROHIBITED

Oxygen bottles loose? You may be in non-compliance with Federal Aviation Regulations. FAA advises

that FAR 103 prohibits the carrying of portable oxygen bottles in aircraft. The regulation does not apply to an aircraft's oxygen supply in which the system is installed in the aircraft and approved as part of the equipment.

In emergency conditions, such as the necessity to transport stretcher cases which require the use of oxygen, the local GADO may authorize deviations under the provisions of FAR 103.5.

CONGRATULATIONS



FAA CERTIFICATES ISSUED RECENTLY TO MONTANA PILOTS

PRIVATE

Very Lionel Smith—Havre
Gary Howard Mattson—Manhattan
Barry Rodger Johnson—Auburn,
Washington

Douglas Merrill Nelson—Martin City
David Harry Carr—Missoula
Michael Lloyd Ross—Billings
Loren George Burton—Missoula
James Hyatt Snodgrass—Big Timber
Eldon Michael Lipp—Hingham
Darwin L. Anderson—Rudyard

COMMERCIAL

John James Neils—Bozeman (ASEL)
Timothy Frand Patten—Missoula (MEL)
Colin Edward Morris—Bozeman (ASEL)
Morris L. Spannagel—Hysham (ASEL)

FLIGHT INSTRUCTOR

John D. Lynch—Billings (Airplane)
(Reinstate)
Lyman W. Choate—Miles City
(Instrument) (Reinstate)

As a state, Alaska leads all the rest in airplane ownership. The Federal Aviation Administration Census of U.S. Civil Aircraft, December 31, 1969, shows that in Alaska there were 80.6 aircraft per 10,000 population.

VFR PILOT EXAM-O-GRAM* NO. 35

Department of Transportation
Federal Aviation Administration

UNICOM FREQUENCIES AND USES

WHAT IS UNICOM? UNICOM is a private aeronautical radio station. It provides a communication channel for many airports without control towers (122.8 MHz) and a channel for many airports with control towers (123.0 MHz). Both the ground station and aircraft transmit and receive on the same frequency. Many of the FAA Written Tests contain test items concerning this subject.

WHAT USES MAY BE MADE OF UNICOM (122.8 MHz) AT THOSE AIRPORTS NOT SERVED BY A CONTROL TOWER?

- 1—It may be used for communications with private aircraft concerning runway and wind conditions, types of fuel available, weather, dispatching, availability of ground transportation, food, and lodging.
- 2—It may be very useful in an emergency. To illustrate this point, here is a sample transmission which might be used at a non-controlled airport: "Great Bend UNICOM, this is I am unable to receive a green light 'gear down' indication. Will you have your mechanic check my landing gear as I make a low pass over Runway 17?" In addition to observing the position of the landing gear during a fly by, the mechanic might also review the emergency gear lowering procedures with the pilot.
- 3—At certain airports, a pilot can turn on the runway lights by tuning his transmitter to the airport UNICOM frequency and then "pressing the microphone button" a predetermined number of times within a predetermined time interval. This is true at these locations as long as the UNICOM station receiver is turned on, even though it is unattended. Note the Airman's Information Manual (AIM) excerpt, above.
- 4—It may be useful in a wide variety of other ways, such as: (a) A student calls to advise his instructor that he is experiencing a rough engine and seeks advice, (b) A private pilot calls in and asks if a mechanic is available to work on his inoperative aircraft tachometer, (c) A doctor requests that an ambulance meet his airplane upon landing to pick up a hospital patient.

OHIO

LIMA 4 NW
827 H35 (1) BL4 S3 F4 U-1 FSS: FINDLAY
Remarks: P-line N, S. For rnwy lghts press mike
button 4 times within 5 seconds on UNICOM freq;
lghts will remain on for 15 min.

HOW CAN A PILOT DETERMINE IF UNICOM IS AVAILABLE AT AN AIRPORT WITHOUT A CONTROL TOWER? The letter "U" in the airport information on the Sectional Chart indicates UNICOM.

GREAT BEND MUNI 4 SW
1890 H80 (3) BL4 S5 F4 U.1 FSS: RUSSELL
Remarks: Ngt opern N/S rnwy only. 1006' (875'
MSL) TV twr 6.5 NM NNE.

The availability of UNICOM can also be determined by referring to the Airport Directory Section of AIM. Note the UNICOM symbol "U-1" is used at airports without a control tower.

CAN COMMUNICATIONS ALWAYS BE ESTABLISHED ON UNICOM? No. Most pilots who land regularly at UNICOM equipped airports, have on occasion been unable to get a reply from UNICOM stations. This situation is usually caused by a shortage of personnel at small airports. Sometimes this results in the UNICOM being "on" but unattended. In some instances, the volume control on the station receiver may have been turned down and then forgotten. Although these situations are unfortunate, pilots should realize they may occur.

HOW IS UNICOM USED AT AIRPORTS SERVED BY A CONTROL TOWER? Communications on 123.0 MHz are identical to those permitted on 122.8 MHz with the exception of information such as runway and wind conditions, weather, etc., which should be furnished by the tower.

HOW DOES A PILOT DETERMINE IF UNICOM IS AVAILABLE AT AN AIRPORT WITH A CONTROL TOWER? The Airport/Facility Directory excerpt to the left shows how UNICOM is listed by the symbol "U-2" in AIM.

NEW ORLEANS

**New Orleans-Lakefront IFR 4 NE FSS: New Or-
leans on Eld 10 H57/17-35(4) (S60 T100 TT160)
BL4 S5 F5, JP1, & U2**

The letter "U" also appears in the airport data box on the Sectional Chart.

HOW ARE UNICOM STATIONS IDENTIFIED? Usually by the name of the airport, but sometimes by the name of the fixed-base operator, or even the town where the station is located. For example: In the New Orleans area there are two airports—Lakefront and International—located about 13 miles apart, and both have UNICOM stations on 123.0. A transient pilot who desires to use UNICOM and doesn't know the name of the operators in the area would normally address his call to "Lakefront UNICOM" or "New Orleans International UNICOM," rather than "New Orleans UNICOM."

(Continued on Page 8)

(Continued on Page 8)

HOW DO PILOTS ABUSE OR MISUSE UNICOM? Perhaps one of the most common abuses is the situation where several aircraft are flying at high altitudes and using one of the UNICOM frequencies for lengthy aircraft-to-aircraft radio chatter. At high altitudes their transmissions reach out in all directions and tend to block out many local airport UNICOM transmissions. Remember, use UNICOM like a party line telephone—be brief, transmit only essential messages.

FAA Aeronautical Center
Flight Standards Technical Division
Operations Branch
P.O. Box 25082
Oklahoma City, Oklahoma 73125

Permission is hereby granted to reproduce this material.

Note: UNICOM stations are crystal controlled to transmit and receive only on one frequency—either 122.8 or 123.0.

UNICOM is never used for Air Traffic Control purposes.

UNICOM frequency 123.05 MHz has been added for use at Heliports.

* Exam-O-Grams are non-directive in nature and are issued solely as an information service to individuals interested in Airman Written Examinations.

MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—“To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in research, development, and advancement of aviation; to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states.”

P. O. Box 1698
Helena, Montana 59601

Second-Class
Postage Paid at
Helena, Mont. 59601



JANUARY, 1973